TITLE: LED Spotlight (Type II)

BACKGROUND OF THE INVENTION

A conventional spotlight mainly includes a shell, a tungsten bulb provided therein, and a glass cover. By use of lighting of the tungsten bulb and reflection from inner curved face of the shell, the most light can be emitted forward concentratively. The known spotlight has following drawbacks:

1. The tungsten bulb has a large volume and occupies large space in the shell. It reduces the reflective effect of lighting.
2. The tungsten bulb needs large power and leads high heat. It will be more possible to cause a fire in accident.
3. It is necessary to use an extra transformer to light the tungsten bulb.
4. The tungsten is easily broken and has a short used period.

Accordingly, the present invention is to overcome the drawback of the conventional product and to provide a LED spotlight, which uses LED and a light-collecting cover to emit light concentratively, and it can be used for a long term and low power needed.

BRIEF DESCRIPTION OF THE DRAWINGS

The following drawings indicate the character and improvement of the present invention.

Figure 1 shows an exploded perspective view of a LED spotlight according to the present invention.

Figure 2 shows an assembled perspective view of Figure 1.

Figure 3 shows a cross-sectional plan view of Figure 2.

Figure 4 shows an outlet of the circuit according to the present invention.

DETAILED DESCRIPTION OF THE INVENTION

Please referring to figure 1 to 3, the present invention relates to an improvement of a spotlight, which includes a lampshell (1), a LED (2), a light-collecting cover (3), and a cap (4). The lampshell (1) can be provided with a connecting ring (11) to engage with the light-collecting cover (3). Several vents (12) can be formed on the lampshell (1). The light-collecting cover is a transparent solid body and has its side being a paraboloid (33). An aperture (31) is formed at bottom side of the cover (3) while a convex (32) is formed therein. A plane (34) is on top of the cover (3). The LED (2) can be connected within the aperture (31). The cap (4) is assembled on the lampshell (1) and the top of the light-collecting cover (3) is engaged within central hole (41) of the cap (4). A heat-remover (5) is provided in the shell (1), which has a ring-type groove (51) at its bottom for engaging with the connecting ring (11). An IC board (6) is provided on the bottom of the heat-remover (5), which is electrically connected with the LED (2). Figure 4 shows an embodiment of the circuit of the IC board (6), which includes several transistors D1~D4 to transform input AC current from electrical rods (13) on the shell (1) to DC current for LED (2).

In use, when the LED (2) is lighting, the light can be emitted concentratively forward in the arrow direction as shown in Figure 3, because of the light-collecting cover (3) and its side paraboloid (33) to reflecting the light efficiently. Hence, the LED spotlight obtains a perfect

light effect. At the same time, the heat-remover (5) contacts the IC board (5) directly that can reduce the temperature in the shell (1) efficiently.

Accordingly, based on the novel design of the present invention, which uses the IC board to transform the electrical current for easy use of LED and uses the light collecting cover to provide a well effect for concentrating the light and reaches an excellent spotlight. That obtains improvement and utility.